

Art Unit: 2451

### **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

**Authorization for this examiner's amendment was given in a telephone interview with applicant representative Derrick Michael Reid on March 10, 2009.**

In the claims:

Please cancel claim 2, claim 15, claim 19 and claim 20.

**Please amend claims 1, 3, 4, 7, 8, 10, 12, 13 and 21 as follows:**

**1. (Currently Amended) A method of broadcasting from a proximal cache at a proximal internet protocol address (IPA) forwarding and routing information for indicating an originator storing web content data associated with an originating uniform resource locator (URL) of a web server at an originating IPA permanently storing the web content data, the method comprising the steps of:**

**generating at the proximal IPA the an originating URL for indicating the originator URL,**

**generating at the proximal IPA a sourcing IPA for indicating the originator,  
generating at the proximal IPA a destination IPA for indicating a destination cache,  
generating a distance metrics for indicating a web hop distance of a number of the plurality of cooperative web caches through which the URL web content data would be communicated from a source at the sourcing IPA through a plurality of cooperative web caches to the proximal web cache at the proximal IPA,**

**associating at the proximal IPA the sourcing IPA with and the originating URL with the distance metric as the forwarding and routing information, and**

**transmitting the forwarding and routing information from the proximal cache at the proximal IPA to the destination cache at a destination IPA, the transmitting of the forwarding and routing information associatinges the sourcing IPA with the originating URL with the destination IPA with the distance metric, for generating a forwarding and routing table in the destination cache, and**

**storing in the destination cache at the destination IPA in a forwarding and routing table the association between the originating URL and the sourcing IPA with the distance metric, the forwarding and routing table for determining the sourcing IPA from a URL request for forwarding and routing a request for web content data to the sourcing IPA.**

Art Unit: 2451

**3. (Currently Amended) The method of claim 1 2 wherein,**  
the originating URL is a proximal URL, the sourcing IPA is the proximal IPA, the proximal cache stores locally the web content data, and  
the distance metric is one indicating that one web hop is between the destination cache to the proximal cache.

**4. (Currently Amended) The method of claim 1 2 wherein, the originating URL is the a source URL,**  
the sourcing IPA indicates an IPA location of the source distally storing the web content data,  
the distance metric is greater than one indicating a number greater than one of the number of web hops between the destination cache through the proximal cache to the source distally storing the web content data.

**7. (Currently Amended) The method of claim 1 wherein,**  
the originating URL is selected from the group consisting of;  
an exact URL comprising a plurality of URL components,  
a wildcard URL comprising a plurality of URL components a last URL component of which being a wildcard component, and  
a coded URL being a coded URL comprising a series of hashing codes of a decomposed URL being a decomposition of the URL selected from the group consisting of either an exact URL or a wildcard URL each of which comprising a series of URL components, the series of hashing codes being a sequence of hashing codes of respective URL segments of a respective series of increasingly concatenated URL components of the series of URL components of the URL.

**8. (Currently Amended) A method of broadcasting from a proximal cache at a proximal internet protocol address (IPA) forwarding and routing information for indicating a distal web cache storing web content data associated with a uniform resource locator (URL) of a web server permanently storing the web content data, a proximal web cache is a first one of a plurality of cooperative web caches, the distal web cache is a last one of the plurality of cooperative web caches, the method comprising the steps of:**  
generating at the proximal IPA a distal URL for indicating the web content data of the distal URL stored in the distal web cache,  
generating at the proximal IPA the proximal IPA for indicating the location of the proximal cache,  
generating at the proximal IPA a destination IPA for indicating a destination cache,

Art Unit: 2451

generating at the proximal IPA a distance metric for indicating a web hop distance of any number of the plurality of cooperative web caches through which the web content data would be communicated from the distal web cache to the destination web cache,

associating at the proximal IPA the proximal IPA and the distal URL and the distance metric as the forwarding and routing information, and

transmitting the routing information from the proximal cache at the proximal IPA to the destination cache at a destination IPA, the transmitting of the forwarding and routing information associating the sourcing IPA with the originating URL with the destination IPA with the distance metric for generating a forwarding and routing table in at least one of the plurality of cooperative web caches, and

storing in the destination cache at the destination IPA in a forwarding and routing table the association between the originating URL with the distance metric with the sourcing IPA, the forwarding and routing table for determining the sourcing IPA from a URL request for forwarding and routing a request for web content data to the sourcing IPA.

10. (Currently Amended) The method of claim 8 wherein, the distal URL is selected from the group consisting of:

an exact URL comprising a plurality of URL components,

a wildcard URL comprising a plurality of URL components a last URL component of which being a wildcard component, and

a coded URL being a coded URL comprising a series of hashing codes of a decomposed URL being a decomposition of the exact URL or the wildcard URL, the series of hashing codes being a sequence of hashing codes of respective URL segments of a respective series of increasingly concatenated URL components of the series of URL components of the exact URL or the wildcard URL.

12. (Currently Amended) A method of broadcasting from a proximal cache at a proximal internet protocol address (IPA) forwarding and routing information for indicating a distal web cache storing web content data associated with an originating uniform resource locator (URL) of a web server permanently storing the web content data, a proximal web cache is a first one of a plurality of cooperative web caches, the distal web cache is a last one of the plurality of cooperative web caches, the method comprising the steps of:

storing at the proximal IPA in a forwarding and routing table a plurality of originating URLs cross referenced to a respective plurality of distance metrics,

generating at the proximal IPA a URL identifier of the plurality of originating URLs, the originating URL for indicating the web content data of the originating URL stored in the distal web cache,

generating at the proximal IPA the proximal IPA for indicating the location of the proximal cache,

generating at the proximal IPA a destination IPA for indicating a destination cache,

Art Unit: 2451

generating at the proximal IPA a distance metric by cross referencing the originating URL to one of the plurality of originating URLs and to a respective one of the plurality of distance metrics for indicating a web hop distance of any number of the plurality of cooperative web caches through which the web content data would be communicated from the distal web cache to the destination web cache,

associating the proximal IPA and the originating URL and the distance metric as the forwarding and routing information, and

transmitting the forwarding and routing information in a routing packet within a routing protocol from the proximal cache at the proximal IPA to the destination cache at a destination IPA, the transmitting of the forwarding and routing information associatinges the sourcing proximal IPA with the originating URL with the destination IPA with the distance metric, for generating a forwarding and routing table in one of a plurality of cooperative web caches, and

storing at the destination IPA a forwarding and routing table for cross referencing the plurality of originating URLs to the plurality of distance metrics and to one or more juxtaposed cooperative web caches IPAs of one or more juxtaposed cooperative web caches of the plurality of cooperative web caches, the one or more juxtaposed cooperative web caches for forwarding and routing originating URLs to distal web caches storing the web content data of the respective plurality of originating URLs.-

13. (Currently Amended) The method of claim 12 wherein,  
 the originating URL is selected from the group consisting of;  
 an exact URL comprising a plurality of URL components,  
 a wildcard URL comprising a plurality of URL component a last URL component of which being a wildcard component, and  
 a coded URL comprising a series of hashing codes of a decomposed URL being a decomposition of the exact URL or the wildcard URL, the series of hashing codes being a sequence of hashing codes of respective hashing of URL segments of a respective series of increasingly concatenated URL components or the series of URL components of the exact URL or the wildcard URL.

21. (Currently Amended) The method of claim 1, wherein  
~~the forwarding and routing information transmitted is an association of the proximal IPA pointing to the proximal cache, with the sourcing IPA pointing to a source, with the destination IPA pointing to the destination cache with the URL pointing to the originator at an originating IPA, and~~  
 the forwarding and routing information is unilaterally communicated from the proximal cache to the destination cache in a routing packet.

### **REASONS FOR ALLOWANCE**

The following is an examiner's statement of reasons for allowance:

The primary reason for allowance of these claims is the fact that the prior art made of record fails to teach, disclose and/or suggest all the features as disclosed in the claimed invention as in independent claims 1, 8 and 12.

Other reasons include applicant's arguments filed on January 12, 2009, which are fully considered and are persuasive. See remarks filed 1/12/09, pgs. 14-53.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### **INTERVIEW SUMMARY**

*Examiner and the attorney of the record discussed the examiner proposed changes/amendments to the claims. Minor informalities were also discussed including antecedent basis errors and were corrected in the applicant submitted amendments. Attached is a set of proposed amendments by the applicant.*

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAMAL B. DIVECHA whose telephone number is (571)272-5863. The examiner can normally be reached on Increased Flex Work Schedule.

Art Unit: 2451

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on 571-272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kamal Divecha

Art Unit 2451.

/John Follansbee/

Supervisory Patent Examiner, Art Unit 2451